IN THE CLAIMS

1 (Previously Presented). A method comprising:

forming an arrayed waveguide grating including an output slab waveguide, a pair of output waveguides, and a directional coupler;

coupling the directional coupler to said output slab waveguide;

coupling a pair of first and second output waveguides between said output slab waveguide and directional coupler; and

making the primary channel spacing between paired first and second waveguides coupled to the same coupler different than the secondary channel spacing between the waveguides coupled to different but adjacent couplers.

Claims 2 and 3 (Canceled).

4 (Previously Presented). The method of claim 1 including making the secondary channel spacing greater than the primary channel spacing.

5 (Original). The method of claim 1, including forming the pairs of waveguides with a length difference of approximately $(2m+1)\lambda_c/4n_{eff}$, where m is an integer, λ_c is the average center wavelength, and n_{eff} is the effective refractive index of the waveguides.

6 (Original). The method of claim 1 including forming said grating on a planar light circuit.

7 (Original). The method of claim 1 including creating output signals having a flat spectral shape.

8 (Previously Presented). An arrayed waveguide grating comprising:

an input waveguide;

a waveguide array coupled to said input waveguide;

an output slab waveguide coupled to said array;

a first and second output waveguide;

a first directional coupler coupled to said first and second output waveguides also coupled to said slab waveguide;

a second directional coupler coupled to said slab waveguide;

a third output waveguide coupled to said second directional coupler; and

wherein a primary channel spacing between output waveguides coupled to the first directional coupler is less than a secondary channel spacing between the first output waveguide coupled to a first directional coupler and the third output waveguide coupled to said second directional coupler.

9 (Original). The grating of claim 8 wherein said output waveguides coupled to the same coupler have a length difference of approximately $(2m+1)\lambda_c/4n_{eff}$, where m is an integer, λ_c is the average center wavelength, and n_{eff} is the effective refractive index of the two successive waveguides.

10 (Original). The grating of claim 8 wherein said grating is formed on a planar light circuit.

11 (Original). The grating of claim 8 wherein said grating creates output signals having a flat spectral shape.

12 (Original). The grating of claim 8 wherein said grating is a multiplexer.

13 (Original). The grating of claim 8 wherein said grating is a demultiplexer.

Claims 14 and 15 (Canceled).

16 (Previously Presented). The grating of claim 8 wherein the primary channel spacing is about one quarter of the secondary channel spacing.

17 (Previously Presented). A method comprising:

forming an arrayed waveguide grating having an output slab waveguide coupled to a pair of output waveguides having a length distance of approximately $(2m+1)\lambda_c/4n_{eff}$, where n is an integer, λ_c is the average center wavelength, and n_{eff} is the effective refractive index of two successive waveguides;

filtering a signal using an arrayed waveguide grating; and

adjusting the spacing between successive waveguides to generate a flat spectral output wave form.

Claim 18 (Canceled).

19 (Original). The method of claim 17 including forming the grating on a planar light circuit.

20 (Original). The method of claim 17 including forming a demultiplexer.

21 (Original). The method of claim 17 including forming a multiplexer.

22 (Currently Amended). An optical filter comprising:

an input and output waveguide coupler; and

a waveguide pair coupled to said output waveguide coupler, said waveguide pair having a ~~length~~ difference such that a flat spectral output signal is produced.

23 (Original). The method of claim 22 including forming said pair having a length difference of approximately $(2m+1)\lambda_c/4n_{eff}$, where m is an integer, λ_c is the average center wavelength, and n_{eff} is the effective refractive index of the two successive waveguides.

24 (Original). The filter of claim 23 wherein said filter is a demultiplexer.

25 (Original). The filter of claim 23 wherein said filter is a multiplexer.

26 (Original). The filter of claim 22 wherein said filter is formed as a planar light circuit.

27 (Original). The filter of claim 22 including a directional coupler coupled to said pair.

28 (Original). The filter of claim 22 including a plurality of waveguide pairs coupled to said output waveguide coupler.

29 (Previously Presented). A method comprising:

forming an arrayed waveguide grating including an output slab waveguide coupled to a first and second output waveguide coupled to a first multi-mode interference coupler, said output slab waveguide also coupled to a third output waveguide coupled to a second multi-mode interference coupler adjacent said first multi-mode interference coupler; and

making the primary channel spacing between the first and second waveguides coupled to the first multi-mode interference coupler different than the secondary channel spacing between the first and third waveguides.

Claims 30 and 31 (Canceled).

32 (Previously Presented). The method of claim 29 including making the secondary channel spacing greater than the primary channel spacing.

33 (Previously Presented). An arrayed waveguide grating comprising:

a waveguide array;

an output slab waveguide coupled to said array;

first, second, third, and fourth output waveguides;

a first multi-mode interference coupler coupled to the first and second output waveguides;

a second multi-mode interference coupler coupled to said third and fourth output waveguides; and

a primary channel spacing between the first and second output waveguides is less than a secondary channel spacing between the first output waveguide and the third output waveguide.

Claims 34 and 35 (Canceled).

36 (New). The filter of claim 22 wherein said difference is a length difference.